UNIT 4 PROJECT
DESIGNING A STATISTICAL STUDY

For this project, you will design, execute, and present the results of a statistical study. Use all the information you have learned in this unit to guide you as you create your study. This project can take the form of a poster or a PowerPoint or Prezi presentation.

Phase I: Study Design

✦ **Devise a statistical question of interest.** It could encompass any variable(s) of your choice. What do you expect to find?

✦ Decide whether you want to use a survey, experiment, or observational study to collect your data. **Explain why you selected this option.**

✦ Once you have decided, come up with a plan to collect your data. **Describe your plan.**

✦ Decide on what type of sampling method you will be using when collecting your data. **Describe the sampling method, and explain why you selected this method.**

Phase II: Data Collection

✦ If you are using a survey, collect data from at least 50 different individuals.

✦ If you are using an experiment or observational study, collect data from at least 20 individuals.

✦ **Describe how you collected your data.** Did it differ from your plan in Phase I? If so, how?

✦ **Organize your data into a neat, legible table.**

Phase III: Data Analysis

✦ **Describe your data.** What trends do you see in the data? Are your findings in line with your expectations? Why or why not?

✦ **Create at least 2 visuals to display your data.** These may include bar graphs, pie charts, box plots, histograms, scatter plots, etc.

✦ **Use the statistical techniques we have learned thus far to make sense of your data.** This may include calculating mean, median, and mode, or calculating a correlation coefficient and coefficient of determination. Tailor your calculations to best suit your data.

Phase IV: Presentation

✦ **Interpret your results.** What conclusions can be drawn about the population from your sample? What do your sample statistics say about the population parameters?

✦ **Discuss potential sources of bias that may affect your ability to draw valid conclusions from your sample.** What are these sources of bias, and how do they affect your ability to make inferences? How could you resolve these sources of bias if you were to conduct the same study again?

✦ End with a final, overall assessment of your study. What did you learn?

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Study Design				
	3	2	1	0
Appropriate Topic	Interesting topic that will interest many peers	Good topic that peers can relate to	Appropriate topic	Inappropriate topic
Desired Data	Data collected is carefully planed and geared to provide meaningful information about the school population	Planned to record multiple types of data that can be used to find meaningful statistics	Planned to record some data	Did not plan to record acceptable data
Sampling Method (x2)	Chose an appropriate sampling method; excellent job describing sampling method and intended execution of sampling	Chose an appropriate sampling method; plan of execution will meet most aspects of sampling method	Selected a sampling method but not the most appropriate for this purpose	Did not plan a method of sampling
Data Collection				
	3	2	1	0
Appropriate Amount	Collected the desired amount of data (at least 50)	Collected most of the desired data	Collected less than half of the desired data	Did not collect data
Execution of Sampling Method	Precisely executed intended sampling method	Loosely executed intended sampling method	Did not execute intended sampling method	Did not use any type of sampling method
Organization of Data	Data is well-organized and easy to read; presentation of data was very neat	Data was well-organized and easy to read	Data was somewhat organized	Did not organize data

Data Analysis				
	3	2	1	0
Computed Meaningful Statistics	Statistics were meticulously computed with no mistake	Statistics were computed with computational mistakes	Statistics were computed with procedural mistakes	Statistics were not computed
Description of Results	Explanations fit the data and are communicated well	Explanations loosely fit the data	Explanations do not fit the data	Did not describe results
Visuals	2 visuals that are mathematically accurate, easy to read, and colorful	2 visuals that display the data accurately	At least 1 visual	No visuals
Presentation				
	3	2	1	0
Interpretation of Results	Accurately presented interpretation of results using appropriate math terminology and procedure	Included mathematical analysis of the data and some interpretation of results	Shared results of the statistical study	No interpretation of results
Bias (x2)	Accurately identified source(s) of bias and described how they could have affected the results of the study	Accurately identified source(s) of bias	Inaccurately identified source(s) of bias	No suggested source of bias
Punctuation and Grammar	Free of misspellings and grammatical errors	Mostly free of misspellings and/or grammatical errors	Many misspellings and/or grammatical errors	Unintelligible due to misspellings and grammatical errors
Organization	Project is neat, easy to read, visually appealing, and well-organized	Project is neat and well-organized	Project needs improvement in neatness and/or organization	Project is difficult to read or illegible

Comments:

TOTAL: _____ / 45